

experience with the HRIS on-line retrieval demonstration project. I would like to emphasize the word "demonstration"; we think that the project has demonstrated that an on-line retrieval system is manageable and is a vital, if not necessary, means of communication within the transportation community.

To determine quickly what work has been done in a given area of interest, an abstract search is probably the best initial step. A formal library search often yields too many reports and just too much information. A brief, quick summary is really all that is necessary. Even with the limited file available to HRIS, we have frequently used the HRIS on-line service for this purpose and have found it to satisfy our needs.

People in operations areas such as traffic, maintenance, and construction encounter problems that require immediate solutions. Other states or agencies have frequently encountered similar problems, and evaluation reports are available. A personal contact may yield sufficient information to make decisions affecting the solution to the problem. HRIS, as a starting point, allows immediate access to the basic information.

We have used HRIS on-line service in the evaluation of new products and new techniques. Even with the limited file available, abstracts relating to recent innovations in traffic, maintenance, and construction have been available.

In an organization the size of our department, proposals for research are constantly received. One of the responsibilities of the research coordinator is to evaluate each proposal. The HRIS on-line service provides an efficient means of summarizing research currently in progress or previously done in that particular area of interest.

In summary, the HRIS on-line system provides that important first step in any research activity. The availability of a brief, but quickly obtained information base certainly enhances the capabilities of the researchers in many application areas.

In our department, the system is used in an informal environment; that is, it is not integrated into a formal library operation. Plans are to make it a part of the research library operation. At this time the sole operator of the system is a research engineer with a computer background and a number of years of experience in various operational and research areas of the department. However, we feel that the system has been designed simply enough so that almost anyone in the research division could operate it adequately—preferably, with the researcher present to define and configure the search strategy.

Our research library, which is separate from the main library, is the informal "walk-in" type and is not staffed with professional librarians. Efforts were made without success before the HRIS on-line project to obtain a professional librarian. Our continuing with the HRIS on-line service may help in this matter. However, the lack of a librarian may have helped us in "selling" the program. The researchers requesting the search were able to become directly involved. As a result they became more intimately familiar with the operation and capabilities of the system. Any notion that the system was just another gimmick was quickly erased once the information requested was immediately displayed.

We use the off-line print option to a large degree when the volume of output is lengthy. A selected search is initially made on titles or other selected elements. If the search appears to be satisfactory, an off-line printout is requested. We have been getting next-day mail service from Battelle, possibly because of our proximity to Columbus. That reduces our connect time and on-line time, which is of course a significant savings.

Selig Starr, Federal Highway Administration

I agree that the test period for the demonstration project was too short for a sound evaluation. This was particularly true for those of us in FHWA because we did not go on line until late August and did not begin to indoctrinate terminal operators and poten-

tial users until September. Therefore, if allowances are made for training and the year-end holidays, the test period was more nearly 3 months than 6.

The FHWA test was conducted at 3 sites—Washington, Region 3 in Baltimore, and Region 7 in Kansas City. Little use of the system was made at the 2 regional offices for a variety of reasons: inexperienced terminal operators, potential users' lack of familiarity with the system capabilities, and perhaps a limited need for quick response searches. The results were more encouraging at Washington, where there are about 160 scientists in a variety of disciplines who are actively engaged in the administration and conduct of research and development. Further, 2 competent, well-trained mathematician-programmers were assigned to conduct the searches. The latter had no difficulty in understanding and using the system. They were especially effective in taking full advantage of the Boolean search capability. The combination of research-oriented scientists and skilled terminal operators was certainly a factor contributing to the demands on the system at the Washington office.

Between early October and mid-January, 21 searches were conducted at Washington. Twelve of these were conducted in November after a detailed description and demonstration of the system were given to many of the research staff earlier in the month. The number of searches fell off considerably in December and January. Only 4 searches were conducted in the regions during the test period. Of the total 25 searches, 12 were evaluated by the users as good to excellent, and 13 were considered fair to poor. Eleven users stated that they needed the results within 1 to 2 days. The remaining 14 indicated that they could have waited 1 week or more. This provides a rough measure of the necessity for an on-line quick response system.

The reactions of the users and terminal operators of the system may be of interest. Here are some of the operators' comments.

1. The BASIS system functioned very well for search and retrieval. Recent modifications have made it even simpler to use.
2. All but one of the requested searches were subject area/key-word types of searches. Perhaps specific field searches are not used because of lack of familiarity with the system characteristics and capabilities.
3. Operators could be more effective in assisting a user with a search if they had more knowledge of the subject area.
4. Many records do not contain information in all fields; e.g., funding and completion date may be missing.
5. The foreign material generated by the HRIS searches was very useful. Even well-informed researchers are apparently not too familiar with pertinent research efforts being conducted in other countries.

As expected, comments from the users were mixed. Some of the favorable comments were as follows:

1. An interactive query system is useful, and we would never have obtained so much information with a 1- or 2-week turnaround;
2. The system is very good, and we will use it again;
3. The system is excellent, but particular search is poor;
4. The search was successful considering the limited file;
5. A rapid response is needed to reply to requests from Congress and FHWA regions, for example; and
6. Capsule summaries and information are good and reduce reading time.

Some of the adverse comments from users were

1. We did not get all the information that we thought was available;
2. We were unfamiliar with proper words or terms to use in making a search;
3. Studies are not up to date;
4. The file does not go back far enough in time;
5. To obtain a cited publication from a library based on the information given is difficult, and a U.S. Department of Transportation Library identification number should be included in the record;

6. String searches do not retrieve all applicable studies since titles, resumes, and abstracts often do not contain the relevant search times; and

7. Slow terminal printout speed precludes obtaining useful information immediately when the number of responses is large.

Although some of these comments could have been anticipated inasmuch as it was necessary to limit the file size during the demonstration project, they are useful indicators of what users expect of a retrieval system. They do suggest that there is a need to keep the data base sufficiently current to satisfy most users. There also appears to be a need for faster printout at the terminal. Since subject area/key-word searches predominate, the present indexing scheme might be examined for adequacy to meet present-day user needs. On the other hand, the need for searching the various fields should be studied with a view to reducing the number considerably.

Although the BASIS system is reasonably straightforward, the casual user cannot use it optimally. From our experience the best results are obtained through interaction between a well-trained operator and the requester working right at the terminal. It helps considerably if the operator has at least a broad knowledge of the highway field.

To summarize, (a) the test period should have been longer; (b) the system gets good marks, but, because depth of search by fields is too complex for the casual user, a well-trained operator is needed; and (c) a quick response capability is clearly needed, but whether the system costs justify the benefits gained is questionable.

Kathleen Weber, Highway Safety Research Institute, University of Michigan

The Highway Safety Research Institute (HSRI), where I am the librarian, is part of the University of Michigan. We became a participant in this program as the agent for the Michigan Department of State Highways and Transportation (MDSHT).

Our facility is identified in Mobley's report as one of those whose use was moderate at first and then dropped off. I think this can be attributed to 2 major factors. First, the subject emphases of HSRI and HRIS do not exactly coincide, and HSRI does have a strong library collection that satisfies most of its information needs. We were, however, very interested in experimenting with this new system and testing its capabilities. Most of our early usage, therefore, consisted of demonstrations and experimentation rather than responses to specific requests. Second, although the HRIS files are more closely geared to the interests of highway department personnel, the primary use of the system was by HSRI research staff rather than by engineers at MDSHT. This was due to the physical separation of HSRI in Ann Arbor from MDSHT in Lansing. The absence of a truly interactive mode for the highway department personnel contributed to their low use rate.

The point here is that, if the retrieval system is going to continue, I feel it is essential that the MDSHT librarian and engineers learn to use the system themselves so that they can access it directly as their needs arise. The present arrangement, which involves the transmission of a request from an engineer to the MDSHT librarian, to me, and then to the data base, is not satisfactory. I agree with Mobley that the best situation involves a librarian or an experienced operator at the terminal and the engineer present as well to evaluate the output and suggest alternative terms or search strategies. Otherwise, the engineer will probably do better to write to Washington and request a standard batch search.

I would now like to make a few remarks about the system on an operational level. At a gathering of the Transportation Safety Information Committee in November, I detailed some of our early problems and funny experiences that we had as a new user of the system. Most of these problems, such as the inability to search on word stems or command words like "time" and "display" and the unreadable off-line print format, have been resolved. Really major improvements have been made in just this short experi-